

Docket No. AUS920030821US1

**CLAIMS:**

What is claimed is:

1. A method, in a data processing system, for averaging out variations in trace data obtained from a plurality of executions of a computer program, comprising:

obtaining call tree data structures corresponding to the trace data for the plurality of executions of the computer program;

adding the call tree data structures to generate an added call tree data structure;

calculating an average of values associated with each node in the added call tree data structure to generate an averaged call tree data structure; and

outputting the averaged call tree data structure, wherein the affect of variations in trace data of various executions of the computer program are minimized in the averaged call tree data structure.

2. The method of claim 1, further comprising:

inputting the trace data to an arcflow tool, wherein the arcflow tool generates the call tree data structures based on the trace data.

3. The method of claim 1, wherein the call tree data structures are xtree data structures.

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4. The method of claim 1, wherein adding the call tree data structures to generate an added call tree data structure includes:

- copying a first call tree data structure; and
- walking a second call tree data structure over the first call tree data structure to generate the added call tree data structure.

5. The method of claim 4, wherein walking the second call tree data structure over the first call tree data structure includes:

- for each node that exists in both the first call tree data structure and the second call tree data structure, generating a node in the added call tree data structure by adding a base value of the node in the second call tree data structure to a base value of a corresponding node in the first call tree data structure.

6. The method of claim 4, wherein walking the second call tree data structure over the first call tree data structure includes:

- for each node that exists in only one of the first call tree data structure and the second call tree data structure, creating a node in the added call tree data structure having a base value corresponding to the base value of the node that exists in either of the first call tree data structure or the second call tree data structure.

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7. The method of claim 1, wherein calculating an average of values associated with each node in the added call tree data structure to generate an averaged call tree data structure includes:

dividing values associated with each node in the added call tree data structure by a total number of call tree data structures that were added to generate the added call tree data structure.

8. The method of claim 1, wherein the values associated with each node include a base value, a number of calls, a cumulative value, and an absolute cumulative value.

9. A computer program product in a computer readable medium for averaging out variations in trace data obtained from a plurality of executions of a computer program, comprising:

first instructions for obtaining call tree data structures corresponding to the trace data for the plurality of executions of the computer program;

second instructions for adding the call tree data structures to generate an added call tree data structure;

third instructions for calculating an average of values associated with each node in the added call tree data structure to generate an averaged call tree data structure; and

fourth instructions for outputting the averaged call tree data structure, wherein the affect of variations in trace data of various executions of the computer program are minimized in the averaged call tree data structure.

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10. The computer program product of claim 9, further comprising:

fifth instructions for inputting the trace data to an arcflow tool, wherein the arcflow tool generates the call tree data structures based on the trace data.

11. The computer program product of claim 9, wherein the call tree data structures are xtree data structures.

12. The computer program product of claim 9, wherein the second instructions for adding the call tree data structures to generate an added call tree data structure include:

instructions for copying a first call tree data structure; and

instructions for walking a second call tree data structure over the first call tree data structure to generate the added call tree data structure.

13. The computer program product of claim 12, wherein the instructions for walking the second call tree data structure over the first call tree data structure include:

for each node that exists in both the first call tree data structure and the second call tree data structure, instructions for generating a node in the added call tree data structure by adding a base value of the node in the second call tree data structure to a base value of a corresponding node in the first call tree data structure.

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14. The computer program product of claim 12, wherein the instructions for walking the second call tree data structure over the first call tree data structure includes:

for each node that exists in only one of the first call tree data structure and the second call tree data structure, instructions for creating a node in the added call tree data structure having a base value corresponding to the base value of the node that exists in either of the first call tree data structure or the second call tree data structure.

15. The computer program product of claim 9, wherein the third instructions for calculating an average of values associated with each node in the added call tree data structure to generate an averaged call tree data structure include:

instructions for dividing values associated with each node in the added call tree data structure by a total number of call tree data structures that were added to generate the added call tree data structure.

16. The computer program product of claim 9, wherein the values associated with each node include a base value, a number of calls, a cumulative value, and an absolute cumulative value.

17. An apparatus for averaging out variations in trace data obtained from a plurality of executions of a computer program, comprising:

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means for obtaining call tree data structures corresponding to the trace data for the plurality of executions of the computer program;

means for adding the call tree data structures to generate an added call tree data structure;

means for calculating an average of values associated with each node in the added call tree data structure to generate an averaged call tree data structure; and

means for outputting the averaged call tree data structure, wherein the affect of variations in trace data of various executions of the computer program are minimized in the averaged call tree data structure.

18. The apparatus of claim 17, further comprising:

means for inputting the trace data to an arcflow tool, wherein the arcflow tool generates the call tree data structures based on the trace data.

19. The apparatus of claim 17, wherein the call tree data structures are xtree data structures.

20. The apparatus of claim 17, wherein the means for adding the call tree data structures to generate an added call tree data structure includes:

means for copying a first call tree data structure; and

means for walking a second call tree data structure over the first call tree data structure to generate the added call tree data structure.

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21. The apparatus of claim 20, wherein the means for walking the second call tree data structure over the first call tree data structure includes:

for each node that exists in both the first call tree data structure and the second call tree data structure, means for generating a node in the added call tree data structure by adding a base value of the node in the second call tree data structure to a base value of a corresponding node in the first call tree data structure.

22. The apparatus of claim 20, wherein the means for walking the second call tree data structure over the first call tree data structure includes:

for each node that exists in only one of the first call tree data structure and the second call tree data structure, means for creating a node in the added call tree data structure having a base value corresponding to the base value of the node that exists in either of the first call tree data structure or the second call tree data structure.

23. The apparatus of claim 17, wherein the means for calculating an average of values associated with each node in the added call tree data structure to generate an averaged call tree data structure includes:

means for dividing values associated with each node in the added call tree data structure by a total number of call tree data structures that were added to generate the added call tree data structure.